FACULTY OF SCIENCE AND HUMANITIES

M.Sc. (Biotechnology/Microbiology) (Semester-1)

In Effect from Academic Year 2021-22

Subject Code: 2SC2000106	**Subject Title: Practical**
COURSE TYPE: CORE COURSE	

Course Objective: This practicals have been structured to provide all the students basic understanding on various tools of cell biology and microbiology.

Teaching scheme (hours) per week		**Credit**			**Theory Marks**		**Practical Marks**		**Total**
Theory	**Practical**	**Theory**	**Practical**	**Total**	**Uni. Assessment**	**Cont. Assessment**	**Uni. Assessment**	**Cont. Assessment**	
-	**8**	**-**	**8**	**8**	**-**	**-**	**120**	**80**	**200**

1. Introduction to Laboratory Instruments with their SOP in Microbiology Laboratory
2. Preparation of Bacteriological Media for the Cultivation of Microorganisms
3. Isolation of Microorganisms by different methods of streaking, plating & serial dilution methods. Slant & Stab cultures.
4. Cultivation of anaerobic bacteria from soil.
5. Study of Bacterial Growth Curve in E.coli
6. Qualitative analysis of Carbohydrates for the detections of different sugars based on Glucose Key
7. Qualitative analysis of Proteins for the detections of different amino acids
8. Estimation of Reducing Sugars by Cole's Method, Anthrone
9. Estimation of Glucose by Nelson-Somogyi's Method
10. Estimation of Protein by Folin-Lowry's Method, Bradford Method
11. Paper Chromatography of Amino Acids
12. Estimation of DNA by Diphenyl Amine Method
13. Estimation of Sugars by DNSA Method
14. Quantitative analysis of Amino acids
15. Isolation and detection of Mitochondria from leaves.
16. Isolation and detection of Chloroplast from leaves.
17. To study different stages of Mitosis and Meiosis.
18. Enzyme inhibition study
19. Study of Effect of Substrate Concentration on Enzyme Activity
20. Study of Effect of pH Concentration on Enzyme Activity
21. Study of Effect of Salt Concentration on Enzyme Activity
22. Estimation of Glucose by Nelson-Somogyi's Method
23. Isolation and characterization of Symbiotic nitrogen fixers
24. Isolation and characterization of non symbiotic nitrogen fixers

Learning Outcome: At the end of the course, the students will be able to perform cell biology and microbiology experiments required in all future semesters.

LIST OF TEXTBOOKS: